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Markets & Technology in Remediation & PFAS

Environmental Business International Inc.

PFAS WAITING GAME CONTINUES IN 2022

While water and waste management is the foundation of an environmental industry that spans more than a century, it was air quality, hazardous waste and remediation that coalesced the core of environmental services in the environmental industry we know today. And while energy transition and climate change represent a whole new era in environmental industry evolution, many see a new era of its own in hazardous waste management and remediation driven by PFAS.

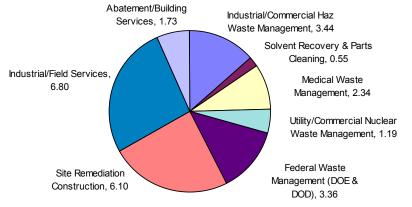
MARKETS & INDUSTRIES

For the purposes of distinguishing it from environmental consulting & engineering, Environmental Business Journal defines environmental contracting as the sum of two of its environmental 'industry' segments: Hazardous Waste Management and Remediation/Industrial Services. These two segments and their respective eight sub-segments represent \$25.5 billion in revenues out of the \$448 billion U.S. environmental industry in 2021, as portrayed on the chart at the right and the table on page 2.

Remediation as a process of identifying and cleaning up environmental contamination, or an environmental media vertical on the page 2 table, is a different 'market' and includes revenue contribution from environmental testing, C&E, specialty equipment and analytical and monitoring instrumentation and information systems 'industry' segments.

Site remediation markets, which include 'front-end' consulting, engineering, site characterization and design; and 'backend' contracting, construction, closure and monitoring is a different market still. For the business strategist it is a matter of how you define the competitive gameboard of market nad industry segments. The \$8.6

Environmental Contracting: Remediation & Haz Waste Segments of the Environmental Industry in 2021 (\$bil)



Source: EBI annual models of Remediation/Industrial Services and Hazardous Waste Management segments

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PFAS Regulatory Update and PFAS & Remediation News in Q3

WEISS ASSOCIATES SUSTAINS STEADY WORK ON SUPERFUND SITES IN NORCAL

Teiss Associates (Emeryville, Calif.) has provided services on environmental projects and for forensic support for many clients over the past 40 years, from simple Phase 1 site assessments for property acquisition/transfer to sites involving complex ground water and soil characterization and remediation, including many CERCLA and RCRA sites. Clients include the Lawrence Livermore National Laboratory, Fortune 500 companies, universities and research facilities, numerous municipal entities, national labs, and petroleum companies. Weiss has provided characterization and/or remediation at 13 of the 36 Superfund sites in the greater San Francisco Bay and Sacramento areas in California and has been the sole hydrogeologic services consultant for Lawrence Livermore National Laboratory (LLNL) a federal research facility, for over 30 years. Weiss Associates' staff of more than 50 technical and support professionals manage approximately \$9 million in annual project billings

Richard Weiss founded Weiss Associates in 1980 and remains involved in the company's operations, business development and technical functions. Weiss Associates' current management and technical teams are led by Bob Devany, Tom Fojut and Agata Sulczynski.

EBJ: Have you seen any change in demand for remediation services in 2022 as a result of economic upheavals, including inflation, gasoline prices, supply chain issues, stock market sways, interest rates and property values or any other uncertainties?

Weiss: Our business has remained relatively stable over the recent pandemic lockdowns. Unfortunately, we believe the lockdown has made it more difficult to grow our business.

EBJ: What is your perspective on the Inflation Reduction Act and the Infrastructure Investment and Jobs Act, and their respective impacts on the remediation market and your client base in particular?

Weiss: We have not seen any new or increased business from the IRA or IIJA up to this point. However, we hope to see some increased business in the next fiscal year when the funds from the acts will start to be distributed.

EBJ: What branches of the federal government are the most promising for increased remediation expenditures over the next five years?

Weiss: U.S. Army Corps of Engineers, U.S. Navy and DOE are the agencies that

we are most familiar with, and we will be tracking them. We believe their primary objectives with respect to remediation are compliance with their state and federal cleanup and monitoring orders.

EBJ: In private markets how much does long-term corporate liability drive remediation investments compared to complying with state and federal regulatory requirements?

Weiss: Most of our private sector clients are committed to complying with their cleanup and abatement orders and reducing long-term environmental risks and liabilities.

EBJ: What business highlights has Weiss had in recent years in project closures and wins or in any corporate developments in strategy and structure?

Weiss: We are starting to increase our marketing based on our unique position as one of the few rad-certified consultants in the San Francisco Bay Area.

EBJ: How has attention on PFAS manifested itself in the kind of work that Weiss has been doing?

Weiss: A few clients have had us sample for PFAS so they would know their status with respect to PFAS. Most clients

are waiting for regulatory agencies to set standards before proceeding with PFAS investigations.

EBJ: Can PFAS be compared to emerging contaminants seen in the past?

Weiss: We would expect enforcement of PFAS regulations to be quite similar to other emerging contaminants, e.g., MTBE, and it will be added to the list of required analyses.

EBJ: How has digitalization and increased automation of project management or monitoring impacted how you manage remediation portfolios?

Weiss: Digitization has had the most impact on our analytic database use. We have always used our accounting software for project management.

EBJ: What other potentially disruptive technologies could play a role in the industry?

Weiss: Development of a remediation method that can quickly desorb VOCs and other chemicals from silty/clayey layers and lenses in alluvial sediments. We see a need for this at CERCLA (NPL) and other sites of similar scope and complexity where Weiss is currently performing services or has done so in the past.

Our continuing goal is to understand clients' environmental challenges and management objectives. Based on that understanding and our expertise, Weiss delivers creative, practical, and responsive solutions, including achieving regulatory compliance and minimizing short- and long-term liabilities while maintaining the highest scientific, engineering, and management standards.

In the past few years we have also helped our clients with efficient and effective vapor intrusion mitigation and stormwater plans for existing facilities, and VI mitigation and stormwater planning for new construction. In addition, we are among the most experienced consultants in Northern California for VOC characterization and remediation in ground water and soil.